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SGPT (ALT) KIT

Mod.IFCC Method

For the Determination of SGPT (ALT) Activity in Serum
(For In vitro Diagnostic Use Only)

CLINICAL SIGNIFICANCE

SGPT is found in a variety of tissues but is mainly found in the liver.

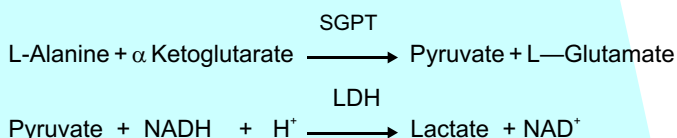
INCREASES

Increased levels are found in hepatitis, cirrhosis, obstructive jaundice and other hepatic diseases. Slight elevation of the enzymes is also seen in myocardial infarction.

METHODOLOGY - Modified IFCC method

PRINCIPLE

SGPT (ALT) catalyzes the transfer of amino group between L-Alanine and α -Ketoglutarate to form Pyruvate and Glutamate. The Pyruvate formed reacts with NADH in the presence of Lactate Dehydrogenase to form NAD. The rate of oxidation of NADH to NAD is measured as a decrease in absorbance which is proportional to the SGPT (ALT) activity in the sample.



REAGENT COMPOSITION

Tris Buffer - 25 mmol/L	LDH	-	2000 U/L
L-Alanine - 200 mmol/L	EDTA	-	5.0 mmol/L
NADH - 0.15 mmol/L	α -Ketoglutarate	-	12 mmol/L

LINEARITY - 450 IU/L

STORAGE / STABILITY

Contents are stable at 2-8°C till the expiry mentioned on the labels.

REAGENT PREPARATION

Reagents are ready to use.

WORKING REAGENT : For sample start assays a single reagent is required. Reconstitute one vial of enzyme reagent (A1) with 10ml of diluent (A2) for 6 x 10ml and 20ml for 5x 20ml. This reagent is stable for at least 4 weeks when stored at 2-8°C.

SAMPLE MATERIAL

Serum. Free from hemolysis. SGPT (ALT) is reported to be stable in serum for 3 days at 2-8°C.

ASSAY PARAMETERS

Reaction	U V Kinetic	Interval	30
Wavelength	340 nm	Sample Vol.	0.10 ml
Zero Settings	Distilled water	Reagent Vol.	1.00 ml
Incub. Temp	37°C	Standard	-
Incub Time	-	Factor	1746
Delay Time	60 Sec.	React. Slope	Decreasing
Read Time	-	Linearity	450 IU / L
No. of read.	4	Units	IU / L

ASSAY PROCEDURE

Wavelength / Filter	-	340 nm
Temperature	-	37°C / 30°C / 25°C
Light Path	-	1 cm

SAMPLE START ASSAY :

Pipette into a clean dry test tube labeled as Test (T) :

Addition Sequence	Test (T) 37°C
Working Reagent	1.0 ml
Incubate at the assay temperature for 1 min. and add	
Sample	0.1 ml

Mix well and read the initial absorbance A_0 after 1 min. and repeat the absorbance reading after 1, 2 & 3 minutes. Calculate the mean absorbance change per min. ($\Delta A/\text{min}$).

CALCULATIONS

SGPT (ALT) Activity in IU/L $37^\circ\text{C} = \Delta A/\text{min} \times 1746$.

TEMPERATURE CONVERSION FACTORS

Assay	Desired Reporting Temperature 37°C
25°C	1.82
30°C	1.38
37°C	1.00

LINEARITY

The procedure is linear upto 450 IU/L at 37°C , if the absorbance change ($\Delta A/\text{min}$) exceeds 0.250, use only the value of the first two minutes to calculate the result, or dilute the sample 1+9 with normal saline (NaCl 0.9%) and repeat the assay (Results x 10).

NOTE

Samples having a very high activity show a very low initial absorbance as most of the NADH is consumed prior to the start of measurement. If this is suspected then dilute the sample and repeat the assay.

The working reagent or the combined reagent should have an absorbance above 1.0 against distilled water at 340 nm. Discard the reagent if the absorbance is below 1.0.

QUALITY CONTROL

To ensure adequate quality control each run should include assayed Normal and Abnormal controls.

NORMAL REFERENCE VALUES :

Serum (Males) - Upto 40 IU/L at 37°C
 Serum (Females) - Upto 31 IU/L at 37°C

It is recommended that each laboratory establish its own normal range representing its patient population.

REFERENCES

IFCC methods for the measurement of catalytic concentrations of enzymes, J. Clin. Chem. Clin. Biochem. (1986). 24:481.

PRESENTATION

PRODUCT CODE	PACK SIZE	SGPT ENZYME REAGENT (A)	SGPT DILUENT (A ₂)
APT 0625	6 x 10 ml	6 Nos.	60 ml
APT 0626	5 x 20 ml	5 Nos.	100 ml

PRODUCT FEATURES AT A GLANCE :

1. Rapid one step Kinetic assay.
2. Highest shelf life : 18 months at $2-8^\circ\text{C}$
3. Reconstituted stability 4 weeks.
4. NADH and Enzymes are specially stabilized.
5. Suitable for all semi and fully automated analysers
6. Linearity 450 IU/L.
7. Convenient Pack Sizes - 6 x 10ml, 5 x 20ml



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ASRITHA DIATECH INDIA PVT. LTD.

IN VITRO DIAGNOSTIC REAGENTS

5-5-35/206, 1st Floor, Prasanth Nagar (I.E), Kukatpally, Hyderabad-500 072, Telangana, INDIA.
 E-mail: asrithadiatech.india@gmail.com, sales.asritha@gmail.com, www.asrithadiatech.in